

CLAIMS

1. A monitor protein for measuring protein phosphorylation, the monitor protein comprising (a) a phosphorylation region comprising an amino acid residue or an amino acid sequence to be phosphorylated, and (b) a variable property region showing a property change attributed to a conformational change of a protein comprising at least the phosphorylation region, which conformational change is caused by phosphorylation of the amino acid residue or the amino acid sequence.
2. The monitor protein of claim 1, wherein the variable property region is a protein that emits fluorescence.
3. The monitor protein of claim 1 or 2, wherein the variable property region is bound to each of both ends of the phosphorylation region.
4. The monitor protein of claim 3, wherein the variable property region comprises RSGFP and BSGFP which are comprised in green fluorescent protein (GFP) of *Aequorea victoria*.
5. The monitor protein of any one of claims 1 to 4, wherein the phosphorylation region comprises the amino acid sequence of SEQ ID NO: 1.
6. A nucleic acid encoding the monitor protein of any one of claims 1 to 5.
7. An expression vector carrying the nucleic acid of claim 6.
8. A method for measuring phosphorylation ability in a cell by introducing the monitor protein of any one of claims 1 to 5, the nucleic acid of claim 6, or the expression vector of claim 7 into the cell.
9. A method for measuring phosphorylation ability of a test protein, the method comprising reacting the test protein with the monitor protein of any one of claims 1 to 5, and measuring a property change of the monitor protein.
10. A method for screening a kinase, the method comprising:
(a) reacting a test protein with the monitor protein of any one of claims 1 to 5,
(b) measuring the property change of the monitor protein, and
(c) selecting the test protein which alters the property of the monitor protein.
11. A method for screening a compound which stimulates or inhibits

phosphorylation, the method comprising:

(a) contacting, in the presence of a test sample, a kinase with the monitor protein of any one of claims 1 to 5, the monitor protein comprising a phosphorylation region to be phosphorylated by the kinase,

- 5 (b) measuring the property change of the monitor protein, and
(c) selecting a compound which stimulates or inhibits the property change in comparison with the property change in the absence of the test sample.

12. A method for screening a compound which stimulates or inhibits phosphorylation, the method comprising:

- 10 (a) preparing a cell into which the expression vector of claim 7 is introduced,
(b) measuring, in the presence of a test sample, the property change of a monitor protein expressed in the cell, and
(c) selecting a compound which stimulates or inhibits the property change
15 in comparison with the property change in the absence of the test sample.